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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/576,609

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Kazunari Fujii

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EXAMINER

NGUYEN, NGON BINH

ART UNIT

PAPER NUMBER

2625

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/576,609	Applicant(s) FUJII ET AL.	
	Examiner NGON NGUYEN	Art Unit 2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/22/07; 5/9/06</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-8 are rejected under 35 U.S.C. 102 (b) as being anticipated by Asami et al. (US Patent No. 5,415,978).

With reference to claim 1, Asami et al. discloses an image forming method comprising:

controlling the temperature of the optical deflector by the temperature control means based on a modulation signal from the modulation means so as to stabilize a resonance frequency of the optical deflector (column 4 lines 40-45, by means of a temperature control which is used as a light source, (FIG 2/54R,G,B), for producing the laser beams modulated by an acousto-optic modulator (AOM) or a modulation means, column 16 lines 29-43 and (FIG 2/58R,G,B). The laser beams are synthesized into a single laser beam L, (FIG 2/LR,G,B), entering a polygon mirror or optical deflector, FIG 2/68, to be deflected in the primary scanning direction, FIG 2/20 x-direction; FIG 3/G and column 17 lines 16-41, a resonator constructed for a light source is mounted on a heat sink, FIG 3/116, secured to a Peltier (a P-N junction heat absorption) element for maintaining the resonator at a predetermined temperature as to stabilize the resonance frequency of the optical deflector without temperature drift).

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With reference to claim 2 (depends on claim 1), Asami et al. further discloses a method wherein:

the temperature control means is the light source which emits light other than drawing light for forming the image to the optical deflector so as to stabilize the resonance frequency of the optical deflector (column 1 lines 17-19, the temperature control is the light source including an inexpensive semiconductor laser for emitting a steady laser beam free of a wavelength (proportional to the invert of frequency) variation, i.e. stabilizing the resonance frequency of the optical deflector).

With reference to claim 3 (depends on claim 2), Asami et al. further discloses a method wherein:

a total amount of the light emitted from the light source to the optical deflector within an arbitrary unit time is controlled such that the total amount becomes close to a predetermined amount (column 16 lines 9-55, the light source, (FIG 2/54G,B,R) emit laser beams having predetermined wavelength, (FIG 2/LR, LB, LG), form parallel light rays through collimator lenses, FIG 2/61, then enter the corresponding acousto-optic modulator (AOM), (FIG 2/58R,58G,58B). The intensities (the total amount of the light) of the laser beams incident on the respective AOM are modulated in accordance with the image to be recorded (predetermined amount of intensities). The modulated laser beams are synthesized to a single laser beam which enters the optical deflector, FIG 2/68).

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With reference to claim 4 (depends on claim 3), Asami et al. further discloses a method wherein:

the unit time comprises a drawing time for forming the image and a non-drawing time for forming no image, and wherein an amount of light emitted from the light source to the optical deflector within the non-drawing time is controlled based on an amount of light emitted to the optical deflector within the drawing time to control a total amount of the light emitted from the light source to the optical deflector within the unit time so as to becomes close to a predetermined amount (column 12, lines 50-53, the unit time being the exposure time of a pixel, when the photosensitive material is subjected to scanning exposure with laser beams deflected by the optical deflector (FIG 2), is preferably up to 10^{-3} sec., especially up to 10^{-4} sec).

With reference to claim 5 (depends on claim 3), Asami et al. further discloses a method wherein:

the unit time is an integral multiple of a $1/4$ oscillating period of the oscillator in the optical deflector (column 20 lines 14-49, using oscillation wavelength 1094 nm as an example, the unit time 10^{-3} would be an integral multiple of a $1/4$ oscillating period).

With reference to claim 6 (depends on claim 1), Asami et al. further discloses a method wherein:

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the light source is a single light source (column 15 lines 63-68 and column 16 lines 1-11, each line source, (FIG 2/54R,54B, 54G), is a single line source corresponding to each color such as R (Red), G (Green), and B (Blue)).

With reference to claim 7 (depends on claim 1), Asami et al. further discloses a method wherein:

the light source is a light source having a plurality of different wavelengths, and wherein a filter for preventing light other than drawing light from the light source from reaching the object to be irradiated is provided (column 15 lines 14-68 and column 16 lines 1-55, the exposure section, FIG 1/50, emits three laser beams (drawing lights), (FIG 2/LR, LB, LG) for exposing (irradiating) the sensitive layer (object to be irradiated) of the photosensitive material. Each laser beam has a wavelength (among plurality of different wavelength) corresponding to the spectral sensitivity of one corresponding photosensitive layer (object to be irradiated) of blue (B) sensitive layer, a green (G) sensitive layer, and a red sensitive layer, TABLES 6-8).

With reference to claim 8 (depends on claim 1), Asami et al. further discloses a method wherein:

the temperature control means comprises a heating element mounted on a part of the optical deflector, and wherein the temperature of the optical deflector is controlled by the heating element so as to stabilize the resonance frequency of the optical deflector (FIG 1/50, the optical deflector and control assembly, FIG 2/50, of the

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exposure section; column 21 lines 8-18, the temperature control means may be selected from well-known means capable of temperature adjustment as such a precision. Exemplary controls are Peltier (P-N junction) elements are preferred because they allow the operating temperature of the semiconductor laser or resonator to be set at a predetermined temperature such as room temperature, as to stabilize the resonance frequency).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ngon Nguyen whose telephone number is (571)270-7533. The examiner can normally be reached on Mon - Thur 8-5 est.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Benny Tieu can be reached on (571)272-7490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/NGON NGUYEN/

Examiner, Art Unit 2625

/King Y. Poon/

Supervisory Patent Examiner, Art Unit 2625